



SEQUENCE LISTING

<110> Horvitz, H. Robert
Yuan, Junying
Shaham, Shai

<120> Relatedness of Human Interleukin-1beta
Convertase Gene to a C. Elegans Cell Death Gene, Inhibitory
Portions of these Genes and Uses Therefor

<130> 01997/211003

<140> US 09/888,243

<141> 2001-06-22

<150> US 09/083,662

<151> 1998-05-22

<150> US 08/394,189

<151> 1995-02-24

<150> US 08/282,211

<151> 1994-07-11

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 <211> 404
 <212> PRT
 <213> Homo sapiens

<220>
 <221> VARIANT
 <222> 26, 65, 285, 287, 324, 340, 361, 390, 393
 <223> Xaa = Any Amino Acid

<400> 4
 Met Ala Asp Lys Val Leu Lys Glu Lys Arg Lys Leu Phe Ile Arg Ser
 1 5 10 15
 Met Gly Glu Gly Thr Ile Asn Gly Leu Xaa Asp Glu Leu Leu Gln Thr
 20 25 30
 Arg Val Leu Asn Lys Glu Glu Met Glu Lys Val Lys Arg Glu Asn Ala
 35 40 45
 Thr Val Met Asp Lys Thr Arg Ala Leu Ile Asp Ser Val Ile Pro Lys
 50 55 60
 Xaa Ala Gln Ala Cys Gln Ile Cys Ile Thr Tyr Ile Cys Glu Glu Asp
 65 70 75 80
 Ser Tyr Leu Ala Gly Thr Leu Gly Leu Ser Ala Asp Gln Thr Ser Gly
 85 90 95
 Asn Tyr Leu Asn Met Gln Asp Ser Gln Gly Val Leu Ser Ser Phe Pro
 100 105 110
 Ala Pro Gln Ala Val Gln Asp Asn Pro Ala Met Pro Thr Ser Ser Gly
 115 120 125
 Ser Glu Gly Asn Val Lys Leu Cys Ser Leu Glu Glu Ala Gln Arg Ile
 130 135 140
 Trp Lys Gln Lys Ser Ala Glu Ile Tyr Pro Ile Met Asp Lys Ser Ser
 145 150 155 160
 Arg Thr Arg Leu Ala Leu Ile Ile Cys Asn Glu Glu Phe Asp Ser Ile
 165 170 175
 Pro Arg Arg Thr Gly Ala Glu Val Asp Ile Thr Gly Met Thr Met Leu
 180 185 190
 Leu Gln Asn Leu Gly Tyr Ser Val Asp Val Lys Lys Asn Leu Thr Ala
 195 200 205
 Ser Asp Met Thr Thr Glu Leu Glu Ala Phe Ala His Arg Pro Glu His
 210 215 220
 Lys Thr Ser Asp Ser Thr Phe Leu Val Phe Met Ser His Gly Ile Arg
 225 230 235 240
 Glu Gly Ile Cys Gly Lys Lys His Ser Glu Gln Val Pro Asp Ile Leu
 245 250 255
 Gln Leu Asn Ala Ile Phe Asn Met Leu Asn Thr Lys Asn Cys Pro Ser
 260 265 270
 Leu Lys Asp Lys Pro Lys Val Ile Ile Ile Gln Ala Xaa Arg Xaa Asp

225					230					235				240
Pro	Arg	Gly	Leu	Cys	Leu	Ile	Ile	Asn	Asn	Glu	His	Phe	Glu	Gln Met
				245					250					255
Pro	Thr	Arg	Asn	Gly	Thr	Lys	Ala	Asp	Lys	Asp	Asn	Leu	Thr	Asn Ile
			260					265					270	
Phe	Arg	Cys	Met	Gly	Tyr	Thr	Val	Ile	Cys	Lys	Asp	Asn	Leu	Thr Gly
		275					280					285		
Arg	Glu	Met	Leu	Ser	Thr	Ile	Arg	Ser	Phe	Gly	Arg	Asn	Asp	Met His
	290					295					300			
Gly	Asp	Ser	Ala	Ile	Leu	Val	Ile	Leu	Ser	His	Gly	Glu	Xaa	Asn Val
305					310					315				320
Ile	Ile	Gly	Val	Asp	Asp	Val	Ser	Val	Asn	Val	His	Glu	Ile	Tyr Asp
				325					330					335
Leu	Leu	Asn	Ala	Ala	Asn	Ala	Pro	Arg	Leu	Ala	Asn	Lys	Pro	Lys Leu
		340						345					350	
Val	Phe	Val	Gln	Ala	Cys	Arg	Gly	Glu	Arg	Arg	Asp	Asn	Gly	Phe Pro
	355						360					365		
Val	Leu	Asp	Ser	Val	Asp	Gly	Val	Pro	Ser	Leu	Ile	Arg	Arg	Gly Trp
	370					375					380			
Asp	Asn	Arg	Asp	Gly	Pro	Leu	Phe	Asn	Phe	Leu	Gly	Cys	Val	Arg Pro
385					390					395				400
Gln	Val	Gln	Gln	Val	Trp	Arg	Lys	Lys	Pro	Ser	Gln	Ala	Asp	Met Leu
				405					410					415
Ile	Ala	Tyr	Ala	Thr	Thr	Ala	Gln	Tyr	Val	Ser	Trp	Arg	Asn	Ser Ala
			420					425					430	
Arg	Gly	Ser	Trp	Phe	Ile	Gln	Ala	Val	Cys	Glu	Val	Phe	Ser	Leu His
	435						440					445		
Ala	Lys	Asp	Met	Asp	Val	Val	Glu	Leu	Leu	Thr	Glu	Val	Asn	Lys Lys
	450					455					460			
Val	Ala	Cys	Gly	Phe	Gln	Thr	Ser	Gln	Gly	Ser	Asn	Ile	Leu	Lys Gln
465					470					475				480
Met	Pro	Glu	Leu	Thr	Ser	Arg	Leu	Leu	Lys	Lys	Phe	Tyr	Phe	Trp Pro
				485					490					495
Glu	Asp	Arg	Gly	Arg	Asn	Ser	Ala	Val						
			500					505						

<210> 6
 <211> 479
 <212> PRT
 <213> Caenorhabditis vulgaris

<220>
 <221> VARIANT
 <222> 98, 292, 310
 <223> Xaa = Any Amino Acid

<400> 6
 Thr Val Ser Leu Ser Leu Ile Ile Ala Arg Gln Val Leu Asn Ser Asp
 1 5 10 15
 Asn Gly Asp Met Ile Asn Ser Cys Arg Thr Glu Arg Asp Asn Glu Lys
 20 25 30
 Glu Ile Val Lys Ala Val Gln Arg Arg Gly Asp Glu Ala Phe Asp Ala
 35 40 45
 Phe Tyr Asp Ala Leu Arg Asp Thr Gly His Asn Asp Leu Ala Asp Val
 50 55 60
 Leu Met Pro Leu Ser Arg Pro Val Asp Ser Asn Pro Val Pro Met Glu
 65 70 75 80
 Cys Pro Met Ser Pro Ser Ser His Arg Arg Ser Arg Ala Leu Ser Pro

				85				90					95				
Pro	Xaa	Tyr	Ala	Ser	Pro	Thr	Arg	Val	His	Arg	Asp	Ser	Ile	Ser	Ser		
			100					105					110				
Val	Ser	Ser	Phe	Thr	Ser	Thr	Tyr	Gln	Asp	Val	Tyr	Ser	Arg	Ala	Thr		
			115					120					125				
Ser	Ser	Ser	Pro	Leu	Gln	Thr	Ser	Asp	Arg	His	Asn	Tyr	Val	Ser	Ala		
			130					135				140					
Ser	Thr	Ser	Phe	Gln	Ser	Gln	Pro	Ala	Ser	Ala	Asn	Ser	Ser	Phe	Thr		
145							150				155				160		
Gly	Ser	Ala	Ser	Leu	Gly	Tyr	Ser	Ser	Ser	Arg	Thr	Arg	Ser	Tyr	Ser		
				165						170					175		
Lys	Thr	Ser	Ala	His	Ser	Gln	Tyr	Ile	Phe	His	Glu	Glu	Asp	Met	Asn		
			180					185					190				
Tyr	Val	Asp	Ala	Pro	Thr	Ile	His	Arg	Val	Phe	Asp	Glu	Lys	Thr	Met		
			195					200					205				
Tyr	Arg	Asn	Phe	Ser	Thr	Pro	Arg	Gly	Leu	Cys	Leu	Ile	Ile	Asn	Asn		
			210				215				220						
Glu	His	Phe	Glu	Gln	Met	Pro	Thr	Arg	Asn	Gly	Thr	Lys	Pro	Asp	Lys		
225						230				235					240		
Asp	Asn	Ile	Ser	Asn	Ile	Phe	Arg	Cys	Met	Gly	Tyr	Ile	Val	His	Cys		
				245					250						255		
Lys	Asp	Asn	Leu	Thr	Gly	Arg	Glu	Met	Met	Ser	Thr	Ile	Arg	Ser	Phe		
			260					265					270				
Gly	Arg	Asn	Asp	Thr	His	Gly	Asp	Ser	Ala	Ile	Leu	Val	Ile	Leu	Ser		
			275				280					285					
His	Gly	Glu	Xaa	Asn	Val	Ile	Ile	Gly	Val	Asp	Asp	Val	Ser	Val	Asn		
			290				295				300						
Val	His	Glu	Ile	Tyr	Xaa	Leu	Leu	Asn	Ala	Ala	Asn	Ala	Pro	Arg	Leu		
305						310				315					320		
Ala	Asn	Lys	Pro	Lys	Leu	Val	Phe	Val	Gln	Ala	Cys	Arg	Gly	Glu	Arg		
				325					330					335			
Arg	Asp	Val	Gly	Phe	Pro	Val	Leu	Asp	Ser	Val	Asp	Gly	Val	Pro	Ser		
			340					345					350				
Leu	Ile	Arg	Arg	Gly	Trp	Asp	Lys	Gly	Asp	Gly	Pro	Leu	Phe	Asn	Phe		
			355				360					365					
Leu	Gly	Cys	Val	Arg	Pro	Gln	Ala	Gln	Gln	Val	Trp	Arg	Lys	Lys	Pro		
			370				375				380						
Ser	Gln	Ala	Asp	Met	Leu	Ile	Ala	Tyr	Ala	Thr	Thr	Ala	Gln	Tyr	Val		
385						390				395					400		
Ser	Trp	Arg	Asn	Ser	Ala	Arg	Gly	Ser	Trp	Phe	Ile	Gln	Ala	Val	Cys		
				405					410					415			
Glu	Val	Phe	Ser	Leu	His	Ala	Lys	Asp	Met	Asp	Val	Val	Glu	Leu	Leu		
			420					425					430				
Thr	Glu	Val	Asn	Lys	Lys	Val	Ala	Cys	Gly	Phe	Gln	Thr	Ser	Gln	Gly		
			435				440					445					
Ala	Asn	Ile	Leu	Lys	Gln	Met	Pro	Glu	Leu	Thr	Ser	Arg	Leu	Leu	Lys		
			450				455					460					
Lys	Phe	Tyr	Phe	Trp	Pro	Glu	Asp	Arg	Asn	Arg	Ser	Ser	Ala	Val			
465						470				475							

<210> 7

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer

<400> 7	
tcatcgactt ttagatgact agagaacatc	30
<210> 8	
<211> 30	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Synthetic Primer	
<400> 8	
gttgcactgc tttcacgatc tcccgtctct	30
<210> 9	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Synthetic Primer	
<400> 9	
gtttaattac ccaagtttga g	21
<210> 10	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Synthetic Primer	
<400> 10	
ggttttaacc agttactcaa g	21
<210> 11	
<211> 19	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Synthetic Primer	
<400> 11	
ccggtgacat tggacactc	19
<210> 12	
<211> 15	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Synthetic Primer	
<400> 12	
actattcaac acttg	15
<210> 13	

<211> 171
 <212> PRT
 <213> Murine

<220>
 <221> VARIANT
 <222> 117
 <223> Xaa = Ala or Val

<400> 13
 Met Leu Thr Val Gln Val Tyr Arg Thr Ser Gln Lys Cys Ser Ser Ser
 1 5 10 15
 Lys His Val Val Glu Val Leu Leu Asp Pro Leu Gly Thr Ser Phe Cys
 20 25 30
 Ser Leu Leu Pro Pro Pro Leu Leu Tyr Glu Thr Asp Arg Gly Val
 35 40 45
 Asp Gln Gln Asp Gly Lys Asn His Thr Gln Ser Pro Gly Cys Glu Glu
 50 55 60
 Ser Asp Ala Gly Lys Glu Glu Leu Met Lys Met Arg Leu Pro Thr Arg
 65 70 75 80
 Ser Asp Met Ile Cys Gly Tyr Ala Cys Leu Lys Gly Asn Ala Ala Met
 85 90 95
 Arg Asn Thr Lys Arg Gly Ser Trp Tyr Ile Glu Ala Leu Thr Gln Val
 100 105 110
 Phe Ser Glu Arg Xaa Cys Asp Met His Val Ala Asp Met Leu Val Lys
 115 120 125
 Val Asn Ala Leu Ile Lys Glu Arg Glu Gly Tyr Ala Pro Gly Thr Glu
 130 135 140
 Phe His Arg Cys Lys Glu Met Ser Glu Tyr Cys Ser Thr Leu Cys Gln
 145 150 155 160
 Gln Leu Tyr Leu Phe Pro Gly Tyr Pro Pro Thr
 165 170

<210> 14
 <211> 402
 <212> PRT
 <213> Murine

<400> 14
 Met Ala Asp Lys Ile Leu Arg Ala Lys Arg Lys Gln Phe Ile Asn Ser
 1 5 10 15
 Val Ser Ile Gly Thr Ile Asn Gly Leu Asp Glu Leu Leu Glu Lys
 20 25 30
 Arg Val Leu Asn Gln Glu Glu Met Asp Lys Ile Lys Leu Ala Asn Ile
 35 40 45
 Thr Ala Met Asp Lys Ala Arg Asp Leu Cys Asp His Val Ser Lys Lys
 50 55 60
 Gly Pro Gln Ala Ser Gln Ile Phe Ile Thr Tyr Ile Cys Asn Glu Asp
 65 70 75 80
 Cys Tyr Leu Ala Gly Ile Leu Glu Leu Gln Ser Ala Pro Ser Ala Glu
 85 90 95
 Thr Phe Val Ala Thr Glu Asp Ser Lys Gly Gly His Pro Ser Ser Ser
 100 105 110
 Glu Thr Lys Glu Glu Gln Asn Lys Glu Asp Gly Thr Phe Pro Gly Leu
 115 120 125
 Thr Gly Thr Leu Lys Phe Cys Pro Leu Glu Lys Ala Gln Lys Leu Trp
 130 135 140
 Lys Glu Asn Pro Ser Glu Ile Tyr Pro Ile Met Asn Thr Thr Thr Arg

145		150		155		160									
Thr	Arg	Leu	Ala	Leu	Ile	Ile	Cys	Asn	Thr	Glu	Phe	Gln	His	Leu	Ser
		165							170					175	
Pro	Arg	Val	Gly	Ala	Gln	Val	Asp	Leu	Arg	Glu	Met	Lys	Leu	Leu	Leu
		180							185					190	
Glu	Asp	Leu	Gly	Tyr	Thr	Val	Lys	Val	Lys	Glu	Asn	Leu	Thr	Ala	Leu
		195					200					205			
Glu	Met	Val	Lys	Glu	Val	Lys	Glu	Phe	Ala	Ala	Cys	Pro	Glu	His	Lys
		210				215					220				
Thr	Ser	Asp	Ser	Thr	Phe	Leu	Val	Phe	Met	Ser	His	Gly	Ile	Gln	Glu
225					230					235					240
Gly	Ile	Cys	Gly	Thr	Thr	Tyr	Ser	Asn	Glu	Val	Ser	Asp	Ile	Leu	Lys
			245					250						255	
Val	Asp	Thr	Ile	Phe	Gln	Met	Met	Asn	Thr	Leu	Lys	Cys	Pro	Ser	Leu
		260						265					270		
Lys	Asp	Lys	Pro	Lys	Val	Ile	Ile	Ile	Gln	Ala	Cys	Arg	Gly	Glu	Lys
		275				280						285			
Gln	Gly	Val	Val	Leu	Leu	Lys	Asp	Ser	Val	Arg	Asp	Ser	Glu	Glu	Asp
		290				295					300				
Phe	Leu	Thr	Asp	Ala	Ile	Phe	Glu	Asp	Asp	Gly	Ile	Lys	Lys	Ala	His
305					310					315					320
Ile	Glu	Lys	Asp	Phe	Ile	Ala	Phe	Cys	Ser	Ser	Thr	Pro	Asp	Asn	Val
			325						330					335	
Ser	Trp	Arg	His	Pro	Val	Arg	Gly	Ser	Leu	Phe	Ile	Glu	Ser	Leu	Ile
		340					345						350		
Lys	His	Met	Lys	Glu	Tyr	Ala	Trp	Ser	Cys	Asp	Leu	Glu	Asp	Ile	Phe
		355				360						365			
Arg	Lys	Val	Arg	Phe	Ser	Phe	Glu	Gln	Pro	Glu	Phe	Arg	Leu	Gln	Met
		370				375					380				
Pro	Thr	Ala	Asp	Arg	Val	Thr	Leu	Thr	Lys	Arg	Phe	Tyr	Leu	Phe	Pro
385				390					395						400
Gly	His														

<210> 15
 <211> 4
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> VARIANT
 <222> 3
 <223> Xaa= Ala, His, Gln, Lys, Phe, Cha, or Asp.

<223> Designed Peptide

<400> 15
 Tyr Val Xaa Asp
 1

<210> 16
 <211> 4
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Designed Peptide

<221> VARIANT
<222> 1,4
<223> Xaa at position 1 is acetylated Tyr. Xaa at
position 4 is Asp aldehyde.

<400> 16
Xaa Val Ala Xaa
1

<210> 17
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Designed Peptide

<400> 17
Tyr Val Ala Asp
1

<210> 18
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<221> VARIANT
<222> 1,2, 4
<223> Xaa at position 1 is acetylated Tyr. Xaa at
position 2 is D-Ala. Xaa at position 4 is Asp
aldehyde.

<223> Designed Peptide

<400> 18
Xaa Xaa Ala Xaa
1

<210> 19
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Designed Peptide

<221> VARIANT
<222> 1,4
<223> Xaa at position 1 is acetylated Tyr. Xaa at
position 4 is Asp aldehyde.

<400> 19
Xaa Val Lys Xaa
1

<210> 20
 <211> 354
 <212> PRT
 <213> Caenorhabditis elegans

<220>
 <221> VARIANT
 <222> 211, 254, 263, 279, 300, 317, 334, 337
 <223> Xaa = Any Amino Acid

<400> 20
 Arg Ser Arg Ser Arg Ser Arg Ala Leu His Ser Ser Asp Arg His Asn
 1 5 10 15
 Tyr Ser Ser Pro Val Asn Ala Phe Pro Ser Gln Pro Ser Ser Ala
 20 25 30
 Asn Ser Ser Phe Thr Gly Cys Ser Ser Leu Gly Tyr Ser Ser Ser Arg
 35 40 45
 Asn Arg Ser Phe Ser Lys Ala Ser Gly Pro Thr Gln Tyr Ile Phe His
 50 55 60
 Glu Glu Asp Met Asn Phe Val Asp Ala Pro Thr Ile Ser Arg Val Phe
 65 70 75 80
 Asp Glu Lys Thr Met Tyr Arg Asn Phe Ser Ser Pro Arg Gly Met Cys
 85 90 95
 Leu Ile Ile Asn Asn Glu His Phe Glu Gln Met Pro Thr Arg Asn Gly
 100 105 110
 Thr Lys Ala Asp Lys Asp Asn Leu Thr Asn Leu Phe Arg Cys Met Gly
 115 120 125
 Tyr Thr Val Ile Cys Lys Asp Asn Leu Thr Gly Arg Gly Met Leu Leu
 130 135 140
 Thr Ile Arg Asp Phe Ala Lys His Glu Ser His Gly Asp Ser Ala Ile
 145 150 155 160
 Leu Val Ile Leu Ser His Gly Glu Glu Asn Val Ile Ile Gly Val Asp
 165 170 175
 Asp Ile Pro Ile Ser Thr His Glu Ile Tyr Asp Leu Leu Asn Ala Ala
 180 185 190
 Asn Ala Pro Arg Leu Ala Asn Lys Pro Lys Ile Val Phe Val Gln Ala
 195 200 205
 Cys Arg Xaa Glu Arg Arg Asp Asn Gly Phe Pro Val Leu Asp Ser Val
 210 215 220
 Asp Gly Val Pro Ala Phe Leu Arg Arg Gly Trp Asp Asn Arg Asp Gly
 225 230 235 240
 Pro Leu Phe Asn Phe Leu Gly Cys Val Arg Pro Gln Val Xaa Gln Val
 245 250 255
 Trp Arg Lys Lys Pro Ser Xaa Ala Asp Ile Leu Ile Arg Tyr Ala Thr
 260 265 270
 Thr Ala Gln Tyr Val Ser Xaa Arg Asn Ser Ala Arg Gly Ser Trp Phe
 275 280 285
 Ile Gln Ala Val Cys Glu Val Phe Ser Thr His Xaa Lys Asp Met Asp
 290 295 300
 Val Val Glu Leu Leu Thr Glu Val Asn Lys Lys Val Xaa Cys Gly Phe
 305 310 315 320
 Gln Thr Ser Gln Gly Ser Asn Ile Leu Lys Gln Met Pro Xaa Met Thr
 325 330 335
 Xaa Arg Leu Leu Lys Lys Phe Tyr Phe Trp Pro Glu Ala Arg Asn Ser
 340 345 350
 Ala Val

<210> 21
 <211> 131
 <212> PRT
 <213> Caenorhabditis elegans

<220>
 <221> VARIANT
 <222> 31, 40, 56, 77, 94, 111, 114
 <223> Xaa = Any Amino Acid

<400> 21
 Val Asp Gly Val Pro Ala Phe Leu Arg Arg Gly Trp Asp Asn Arg Asp
 1 5 10 15
 Gly Pro Leu Phe Asn Phe Leu Gly Cys Val Arg Pro Gln Val Xaa Gln
 20 25 30
 Val Trp Arg Lys Lys Pro Ser Xaa Ala Asp Ile Leu Ile Arg Tyr Ala
 35 40 45
 Thr Thr Ala Gln Tyr Val Ser Xaa Arg Asn Ser Ala Arg Gly Ser Trp
 50 55 60
 Phe Ile Gln Ala Val Cys Glu Val Phe Ser Thr His Xaa Lys Asp Met
 65 70 75 80
 Asp Val Val Glu Leu Leu Thr Glu Val Asn Lys Lys Val Xaa Cys Gly
 85 90 95
 Phe Gln Thr Ser Gln Gly Ser Asn Ile Leu Lys Gln Met Pro Xaa Met
 100 105 110
 Thr Xaa Arg Leu Leu Lys Lys Phe Tyr Phe Trp Pro Glu Ala Arg Asn
 115 120 125
 Ser Ala Val
 130

<210> 22
 <211> 223
 <212> PRT
 <213> Caenorhabditis elegans

<220>
 <221> VARIANT
 <222> 211
 <223> Xaa = Any Amino Acid

<400> 22
 Arg Ser Arg Ser Arg Ser Arg Ala Leu His Ser Ser Asp Arg His Asn
 1 5 10 15
 Tyr Ser Ser Pro Pro Val Asn Ala Phe Pro Ser Gln Pro Ser Ser Ala
 20 25 30
 Asn Ser Ser Phe Thr Gly Cys Ser Ser Leu Gly Tyr Ser Ser Ser Arg
 35 40 45
 Asn Arg Ser Phe Ser Lys Ala Ser Gly Pro Thr Gln Tyr Ile Phe His
 50 55 60
 Glu Glu Asp Met Asn Phe Val Asp Ala Pro Thr Ile Ser Arg Val Phe
 65 70 75 80
 Asp Glu Lys Thr Met Tyr Arg Asn Phe Ser Ser Pro Arg Gly Met Cys
 85 90 95
 Leu Ile Ile Asn Asn Glu His Phe Glu Gln Met Pro Thr Arg Asn Gly
 100 105 110
 Thr Lys Ala Asp Lys Asp Asn Leu Thr Asn Leu Phe Arg Cys Met Gly
 115 120 125
 Tyr Thr Val Ile Cys Lys Asp Asn Leu Thr Gly Arg Gly Met Leu Leu

130	135	140
Thr Ile Arg Asp Phe	Ala Lys His Glu Ser	His Gly Asp Ser Ala Ile
145	150	155
Leu Val Ile Leu Ser	His Gly Glu Glu Asn	Val Ile Ile Gly Val Asp
	165	170
Asp Ile Pro Ile Ser	Thr His Glu Ile Tyr	Asp Leu Leu Asn Ala Ala
	180	185
Asn Ala Pro Arg Leu	Ala Asn Lys Pro Lys	Ile Val Phe Val Gln Ala
	195	200
Cys Arg Xaa Glu Arg	Arg Asp Asn Gly Phe	Pro Val Leu Asp Ser
	210	215
		220

<210> 23
 <211> 294
 <212> PRT
 <213> Homo sapiens

<220>
 <221> VARIANT
 <222> 175, 177, 214, 230, 251, 280, 283
 <223> Xaa = Any Amino Acid

<400> 23

Phe	Pro	Ala	Pro	Gln	Ala	Val	Gln	Asp	Asn	Pro	Ala	Met	Pro	Thr	Ser
1				5					10					15	
Ser	Gly	Ser	Glu	Gly	Asn	Val	Lys	Leu	Cys	Ser	Leu	Glu	Glu	Ala	Gln
			20					25					30		
Arg	Ile	Trp	Lys	Gln	Lys	Ser	Ala	Glu	Ile	Tyr	Pro	Ile	Met	Asp	Lys
		35					40					45			
Ser	Ser	Arg	Thr	Arg	Leu	Ala	Leu	Ile	Ile	Cys	Asn	Glu	Glu	Phe	Asp
	50				55					60					
Ser	Ile	Pro	Arg	Arg	Thr	Gly	Ala	Glu	Val	Asp	Ile	Thr	Gly	Met	Thr
	65				70				75						80
Met	Leu	Leu	Gln	Asn	Leu	Gly	Tyr	Ser	Val	Asp	Val	Lys	Lys	Asn	Leu
			85						90					95	
Thr	Ala	Ser	Asp	Met	Thr	Thr	Glu	Leu	Glu	Ala	Phe	Ala	His	Arg	Pro
			100					105					110		
Glu	His	Lys	Thr	Ser	Asp	Ser	Thr	Phe	Leu	Val	Phe	Met	Ser	His	Gly
		115					120					125			
Ile	Arg	Glu	Gly	Ile	Cys	Gly	Lys	Lys	His	Ser	Glu	Gln	Val	Pro	Asp
	130					135					140				
Ile	Leu	Gln	Leu	Asn	Ala	Ile	Phe	Asn	Met	Leu	Asn	Thr	Lys	Asn	Cys
	145				150					155					160
Pro	Ser	Leu	Lys	Asp	Lys	Pro	Lys	Val	Ile	Ile	Ile	Gln	Ala	Xaa	Arg
			165					170						175	
Xaa	Asp	Ser	Pro	Gly	Val	Val	Trp	Phe	Lys	Asp	Ser	Val	Gly	Val	Ser
		180					185						190		
Gly	Asn	Leu	Ser	Leu	Pro	Thr	Thr	Glu	Glu	Phe	Glu	Asp	Asp	Ala	Ile
		195				200						205			
Lys	Lys	Ala	His	Ile	Xaa	Lys	Asp	Phe	Ile	Ala	Phe	Cys	Ser	Ser	Thr
	210					215					220				
Pro	Asp	Asn	Val	Ser	Xaa	Arg	His	Pro	Thr	Met	Gly	Ser	Val	Phe	Ile
	225				230					235					240
Gly	Arg	Leu	Ile	Glu	His	Met	Gln	Glu	Tyr	Xaa	Cys	Ser	Cys	Asp	Val
			245						250					255	
Glu	Glu	Ile	Phe	Arg	Lys	Val	Arg	Phe	Ser	Phe	Glu	Gln	Pro	Asp	Gly
		260					265						270		
Arg	Ala	Gln	Met	Pro	Thr	Thr	Xaa	Arg	Val	Xaa	Leu	Thr	Arg	Cys	Phe

275
Tyr Leu Phe Pro Gly His
290

280

285

<210> 24
<211> 107
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 27, 43, 64, 93, 96
<223> Xaa = Any Amino Acid

<400> 24
Ser Val Gly Val Ser Gly Asn Leu Ser Leu Pro Thr Thr Glu Glu Phe
1 5 10 15
Glu Asp Asp Ala Ile Lys Lys Ala His Ile Xaa Lys Asp Phe Ile Ala
20 25 30
Phe Cys Ser Ser Thr Pro Asp Asn Val Ser Xaa Arg His Pro Thr Met
35 40 45
Gly Ser Val Phe Ile Gly Arg Leu Ile Glu His Met Gln Glu Tyr Xaa
50 55 60
Cys Ser Cys Asp Val Glu Glu Ile Phe Arg Lys Val Arg Phe Ser Phe
65 70 75 80
Glu Gln Pro Asp Gly Arg Ala Gln Met Pro Thr Thr Xaa Arg Val Xaa
85 90 95
Leu Thr Arg Cys Phe Tyr Leu Phe Pro Gly His
100 105

<210> 25
<211> 187
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 175, 177
<223> Xaa = Any Amino Acid

<400> 25
Phe Pro Ala Pro Gln Ala Val Gln Asp Asn Pro Ala Met Pro Thr Ser
1 5 10 15
Ser Gly Ser Glu Gly Asn Val Lys Leu Cys Ser Leu Glu Glu Ala Gln
20 25 30
Arg Ile Trp Lys Gln Lys Ser Ala Glu Ile Tyr Pro Ile Met Asp Lys
35 40 45
Ser Ser Arg Thr Arg Leu Ala Leu Ile Ile Cys Asn Glu Glu Phe Asp
50 55 60
Ser Ile Pro Arg Arg Thr Gly Ala Glu Val Asp Ile Thr Gly Met Thr
65 70 75 80
Met Leu Leu Gln Asn Leu Gly Tyr Ser Val Asp Val Lys Lys Asn Leu
85 90 95
Thr Ala Ser Asp Met Thr Thr Glu Leu Glu Ala Phe Ala His Arg Pro
100 105 110
Glu His Lys Thr Ser Asp Ser Thr Phe Leu Val Phe Met Ser His Gly
115 120 125

Ile	Arg	Glu	Gly	Ile	Cys	Gly	Lys	Lys	His	Ser	Glu	Gln	Val	Pro	Asp
	130					135					140				
Ile	Leu	Gln	Leu	Asn	Ala	Ile	Phe	Asn	Met	Leu	Asn	Thr	Lys	Asn	Cys
145				150						155					160
Pro	Ser	Leu	Lys	Asp	Lys	Pro	Lys	Val	Ile	Ile	Ile	Gln	Ala	Xaa	Arg
			165					170						175	
Xaa	Asp	Ser	Pro	Gly	Val	Val	Trp	Phe	Lys	Asp					
			180					185							

<210> 26
 <211> 172
 <212> PRT
 <213> Murine

<220>
 <221> VARIANT
 <222> 118
 <223> Xaa = Any Amino Acid

<400> 26															
Met	Leu	Thr	Val	Gln	Val	Tyr	Arg	Thr	Ser	Gln	Lys	Cys	Ser	Ser	Ser
1				5					10					15	
Lys	His	Val	Val	Glu	Val	Leu	Leu	Asp	Pro	Leu	Gly	Thr	Ser	Phe	Cys
			20					25					30		
Ser	Leu	Leu	Pro	Pro	Pro	Leu	Leu	Leu	Tyr	Glu	Thr	Asp	Arg	Gly	Val
		35				40						45			
Asp	Gln	Gln	Asp	Gly	Lys	Asn	His	Thr	Gln	Ser	Pro	Gly	Cys	Glu	Glu
	50				55						60				
Ser	Asp	Ala	Gly	Lys	Glu	Glu	Leu	Met	Lys	Met	Arg	Leu	Pro	Thr	Arg
65				70					75						80
Ser	Asp	Met	Ile	Cys	Gly	Tyr	Ala	Cys	Leu	Lys	Gly	Asn	Ala	Ala	Met
				85					90					95	
Arg	Asn	Thr	Lys	Arg	Gly	Ser	Trp	Tyr	Ile	Glu	Ala	Leu	Thr	Gln	Val
			100					105					110		
Phe	Ser	Glu	Arg	Ala	Xaa	Cys	Asp	Met	His	Val	Ala	Asp	Met	Leu	Val
		115				120						125			
Lys	Val	Asn	Ala	Leu	Ile	Lys	Glu	Arg	Glu	Gly	Tyr	Ala	Pro	Gly	Thr
	130					135					140				
Glu	Phe	His	Arg	Cys	Lys	Glu	Met	Ser	Glu	Tyr	Cys	Ser	Thr	Leu	Cys
145				150						155					160
Gln	Gln	Leu	Tyr	Leu	Phe	Pro	Gly	Tyr	Pro	Pro	Thr				
				165					170						

<210> 27
 <211> 172
 <212> PRT
 <213> Murine

<220>
 <221> VARIANT
 <222> 118
 <223> Xaa = Any Amino Acid

<400> 27															
Met	Leu	Thr	Val	Gln	Val	Tyr	Arg	Thr	Ser	Gln	Lys	Cys	Ser	Ser	Ser
1				5					10					15	
Lys	His	Val	Val	Glu	Val	Leu	Leu	Asp	Pro	Leu	Gly	Thr	Ser	Phe	Cys

			20					25				30			
Ser	Leu	Leu	Pro	Pro	Pro	Leu	Leu	Leu	Tyr	Glu	Thr	Asp	Arg	Gly	Val
		35					40					45			
Asp	Gln	Gln	Asp	Gly	Lys	Asn	His	Thr	Gln	Ser	Pro	Gly	Cys	Glu	Glu
	50					55					60				
Ser	Asp	Ala	Gly	Lys	Glu	Glu	Leu	Met	Lys	Met	Arg	Leu	Pro	Thr	Arg
65					70					75					80
Ser	Asp	Met	Ile	Cys	Gly	Tyr	Ala	Cys	Leu	Lys	Gly	Asn	Ala	Ala	Met
				85					90					95	
Arg	Asn	Thr	Lys	Arg	Gly	Ser	Trp	Tyr	Ile	Glu	Ala	Leu	Thr	Gln	Val
			100					105					110		
Phe	Ser	Glu	Arg	Val	Xaa	Cys	Asp	Met	His	Val	Ala	Asp	Met	Leu	Val
	115						120					125			
Lys	Val	Asn	Ala	Leu	Ile	Lys	Glu	Arg	Glu	Gly	Tyr	Ala	Pro	Gly	Thr
	130					135					140				
Glu	Phe	His	Arg	Cys	Lys	Glu	Met	Ser	Glu	Tyr	Cys	Ser	Thr	Leu	Cys
145					150					155					160
Gln	Gln	Leu	Tyr	Leu	Phe	Pro	Gly	Tyr	Pro	Pro	Thr				
				165					170						

<210> 28
 <211> 451
 <212> PRT
 <213> Murine

<400> 28

Met	Ala	Ala	Pro	Ser	Gly	Arg	Ser	Gln	Ser	Ser	Leu	His	Arg	Lys	Gly
1				5					10					15	
Leu	Met	Ala	Ala	Asp	Arg	Arg	Ser	Arg	Ile	Leu	Ala	Val	Cys	Gly	Met
			20					25					30		
His	Pro	Asp	His	Gln	Glu	Thr	Leu	Lys	Lys	Asn	Arg	Val	Val	Leu	Ala
		35					40				45				
Lys	Gln	Leu	Leu	Leu	Ser	Glu	Leu	Leu	Glu	His	Leu	Leu	Glu	Lys	Asp
	50					55					60				
Ile	Ile	Thr	Leu	Glu	Met	Arg	Glu	Leu	Ile	Gln	Ala	Lys	Gly	Gly	Ser
65					70					75					80
Phe	Ser	Gln	Asn	Val	Glu	Leu	Asn	Leu	Leu	Pro	Lys	Arg	Gly	Pro	Gln
			85						90					95	
Ala	Phe	Asp	Ala	Phe	Cys	Glu	Ala	Leu	Arg	Glu	Thr	Arg	Gln	Gly	His
			100					105					110		
Leu	Glu	Asp	Leu	Leu	Leu	Thr	Thr	Leu	Ser	Asp	Ile	Gln	His	Val	Leu
		115					120					125			
Pro	Pro	Leu	Ser	Cys	Asp	Tyr	Asp	Thr	Ser	Leu	Pro	Phe	Ser	Val	Cys
	130					135					140				
Glu	Ser	Cys	Pro	Pro	His	Lys	Gln	Leu	Arg	Leu	Ser	Thr	Asp	Ala	Thr
145					150					155					160
Glu	His	Ser	Leu	Asp	Asn	Gly	Asp	Gly	Pro	Pro	Cys	Leu	Leu	Val	Lys
				165					170					175	
Pro	Cys	Thr	Pro	Glu	Phe	Tyr	Gln	Ala	His	Tyr	Gln	Leu	Ala	Tyr	Arg
			180					185					190		
Leu	Gln	Ser	Gln	Pro	Arg	Gly	Leu	Ala	Leu	Val	Leu	Ser	Asn	Val	His
		195					200					205			
Phe	Thr	Gly	Glu	Lys	Asp	Leu	Glu	Phe	Arg	Ser	Gly	Gly	Asp	Val	Asp
	210					215					220				
His	Thr	Thr	Leu	Val	Thr	Leu	Phe	Lys	Leu	Leu	Gly	Tyr	Asn	Val	His
225					230					235					240
Val	Leu	His	Asp	Gln	Thr	Ala	Gln	Glu	Met	Gln	Glu	Lys	Leu	Gln	Asn
				245					250					255	

Phe	Ala	Gln	Leu	Pro	Ala	His	Arg	Val	Thr	Asp	Ser	Cys	Val	Val	Ala
			260					265					270		
Leu	Leu	Ser	His	Gly	Val	Glu	Gly	Gly	Ile	Tyr	Gly	Val	Asp	Gly	Lys
		275					280					285			
Leu	Leu	Gln	Leu	Gln	Glu	Val	Phe	Arg	Leu	Phe	Asp	Asn	Ala	Asn	Cys
		290				295					300				
Pro	Ser	Leu	Gln	Asn	Lys	Pro	Lys	Met	Phe	Phe	Ile	Gln	Ala	Cys	Arg
305					310					315					320
Gly	Asp	Glu	Thr	Asp	Arg	Gly	Val	Asp	Gln	Gln	Asp	Gly	Lys	Asn	His
				325					330					335	
Thr	Gln	Ser	Pro	Gly	Cys	Glu	Glu	Ser	Asp	Ala	Gly	Lys	Glu	Glu	Leu
			340					345					350		
Met	Lys	Met	Arg	Leu	Pro	Thr	Arg	Ser	Asp	Met	Ile	Cys	Gly	Tyr	Ala
		355					360					365			
Cys	Leu	Lys	Gly	Asn	Ala	Ala	Met	Arg	Asn	Thr	Lys	Arg	Gly	Ser	Trp
		370				375					380				
Tyr	Ile	Glu	Ala	Leu	Thr	Gln	Val	Phe	Ser	Glu	Arg	Ala	Cys	Asp	Met
385					390					395					400
His	Val	Ala	Asp	Met	Leu	Val	Lys	Val	Asn	Ala	Leu	Ile	Lys	Glu	Arg
				405					410					415	
Glu	Gly	Tyr	Ala	Pro	Gly	Thr	Glu	Phe	His	Arg	Cys	Lys	Glu	Met	Ser
			420					425					430		
Glu	Tyr	Cys	Ser	Thr	Leu	Cys	Gln	Gln	Leu	Tyr	Leu	Phe	Pro	Gly	Tyr
		435					440					445			
Pro	Pro	Thr													
		450													

<210> 29
 <211> 503
 <212> PRT
 <213> Caenorhabditis elegans

<400> 29

Met	Met	Arg	Gln	Asp	Arg	Arg	Ser	Leu	Leu	Glu	Arg	Asn	Ile	Met	Met
1				5					10					15	
Phe	Ser	Ser	His	Leu	Lys	Val	Asp	Glu	Ile	Leu	Glu	Val	Leu	Ile	Ala
			20					25					30		
Lys	Gln	Val	Leu	Asn	Ser	Asp	Asn	Gly	Asp	Met	Ile	Asn	Ser	Cys	Gly
		35					40					45			
Thr	Val	Arg	Glu	Lys	Arg	Arg	Glu	Ile	Val	Lys	Ala	Val	Gln	Arg	Arg
		50				55					60				
Gly	Asp	Val	Ala	Phe	Asp	Ala	Phe	Tyr	Asp	Ala	Leu	Arg	Ser	Thr	Gly
65					70					75					80
His	Glu	Gly	Leu	Ala	Glu	Val	Leu	Glu	Pro	Leu	Ala	Arg	Ser	Val	Asp
				85					90					95	
Ser	Asn	Ala	Val	Glu	Phe	Glu	Cys	Pro	Met	Ser	Pro	Ala	Ser	His	Arg
		100						105					110		
Arg	Ser	Arg	Ala	Leu	Ser	Pro	Ala	Gly	Tyr	Thr	Ser	Pro	Thr	Arg	Val
		115					120					125			
His	Arg	Asp	Ser	Val	Ser	Ser	Val	Ser	Ser	Phe	Thr	Ser	Tyr	Gln	Asp
		130				135					140				
Ile	Tyr	Ser	Arg	Ala	Arg	Ser	Arg	Ser	Arg	Ser	Arg	Ala	Leu	His	Ser
145					150						155				160
Ser	Asp	Arg	His	Asn	Tyr	Ser	Ser	Pro	Pro	Val	Asn	Ala	Phe	Pro	Ser
				165					170					175	
Gln	Pro	Ser	Ser	Ala	Asn	Ser	Ser	Phe	Thr	Gly	Cys	Ser	Ser	Leu	Gly
			180					185					190		
Tyr	Ser	Ser	Ser	Arg	Asn	Arg	Ser	Phe	Ser	Lys	Ala	Ser	Gly	Pro	Thr

		195					200				205				
Gln	Tyr	Ile	Phe	His	Glu	Glu	Asp	Met	Asn	Phe	Val	Asp	Ala	Pro	Thr
	210					215					220				
Ile	Ser	Arg	Val	Phe	Asp	Glu	Lys	Thr	Met	Tyr	Arg	Asn	Phe	Ser	Ser
225					230					235					240
Pro	Arg	Gly	Met	Cys	Leu	Ile	Ile	Asn	Asn	Glu	His	Phe	Glu	Gln	Met
				245					250					255	
Pro	Thr	Arg	Asn	Gly	Thr	Lys	Ala	Asp	Lys	Asp	Asn	Leu	Thr	Asn	Leu
			260					265					270		
Phe	Arg	Cys	Met	Gly	Tyr	Thr	Val	Ile	Cys	Lys	Asp	Asn	Leu	Thr	Gly
	275						280				285				
Arg	Gly	Met	Leu	Leu	Thr	Ile	Arg	Asp	Phe	Ala	Lys	His	Glu	Ser	His
	290					295					300				
Gly	Asp	Ser	Ala	Ile	Leu	Val	Ile	Leu	Ser	His	Gly	Glu	Glu	Asn	Val
305					310					315					320
Ile	Ile	Gly	Val	Asp	Asp	Ile	Pro	Ile	Ser	Thr	His	Glu	Ile	Tyr	Asp
				325					330					335	
Leu	Leu	Asn	Ala	Ala	Asn	Ala	Pro	Arg	Leu	Ala	Asn	Lys	Pro	Lys	Ile
			340					345					350		
Val	Phe	Val	Gln	Ala	Cys	Arg	Gly	Glu	Arg	Arg	Asp	Asn	Gly	Phe	Pro
	355						360				365				
Val	Leu	Asp	Ser	Val	Asp	Gly	Val	Pro	Ala	Phe	Leu	Arg	Arg	Gly	Trp
	370					375					380				
Asp	Asn	Arg	Asp	Gly	Pro	Leu	Phe	Asn	Phe	Leu	Gly	Cys	Val	Arg	Pro
385					390					395					400
Gln	Val	Gln	Gln	Val	Trp	Arg	Lys	Lys	Pro	Ser	Gln	Ala	Asp	Ile	Leu
				405					410					415	
Ile	Arg	Tyr	Ala	Thr	Thr	Ala	Gln	Tyr	Val	Ser	Trp	Arg	Asn	Ser	Ala
			420					425					430		
Arg	Gly	Ser	Trp	Phe	Ile	Gln	Ala	Val	Cys	Glu	Val	Phe	Ser	Thr	His
	435						440					445			
Ala	Lys	Asp	Met	Asp	Val	Val	Glu	Leu	Leu	Thr	Glu	Val	Asn	Lys	Lys
	450					455					460				
Val	Ala	Cys	Gly	Phe	Gln	Thr	Ser	Gln	Gly	Ser	Asn	Ile	Leu	Lys	Gln
465					470					475					480
Met	Pro	Glu	Met	Thr	Ser	Arg	Leu	Leu	Lys	Lys	Phe	Tyr	Phe	Trp	Pro
				485					490					495	
Glu	Ala	Arg	Asn	Ser	Ala	Val									
			500												

<210> 30
 <211> 404
 <212> PRT
 <213> Homo sapiens

<400> 30
 Met Ala Asp Lys Val Leu Lys Glu Lys Arg Lys Leu Phe Ile Arg Ser
 1 5 10 15
 Met Gly Glu Gly Thr Ile Asn Gly Leu Leu Asp Glu Leu Leu Gln Thr
 20 25 30
 Arg Val Leu Asn Lys Glu Glu Met Glu Lys Val Lys Arg Glu Asn Ala
 35 40 45
 Thr Val Met Asp Lys Thr Arg Ala Leu Ile Asp Ser Val Ile Pro Lys
 50 55 60
 Gly Ala Gln Ala Cys Gln Ile Cys Ile Thr Tyr Ile Cys Glu Glu Asp
 65 70 75 80
 Ser Tyr Leu Ala Gly Thr Leu Gly Leu Ser Ala Asp Gln Thr Ser Gly
 85 90 95

Asn	Tyr	Leu	Asn	Met	Gln	Asp	Ser	Gln	Gly	Val	Leu	Ser	Ser	Phe	Pro
			100					105					110		
Ala	Pro	Gln	Ala	Val	Gln	Asp	Asn	Pro	Ala	Met	Pro	Thr	Ser	Ser	Gly
		115					120					125			
Ser	Glu	Gly	Asn	Val	Lys	Leu	Cys	Ser	Leu	Glu	Glu	Ala	Gln	Arg	Ile
	130					135					140				
Trp	Lys	Gln	Lys	Ser	Ala	Glu	Ile	Tyr	Pro	Ile	Met	Asp	Lys	Ser	Ser
145					150					155					160
Arg	Thr	Arg	Leu	Ala	Leu	Ile	Ile	Cys	Asn	Glu	Glu	Phe	Asp	Ser	Ile
				165					170					175	
Pro	Arg	Arg	Thr	Gly	Ala	Glu	Val	Asp	Ile	Thr	Gly	Met	Thr	Met	Leu
			180					185					190		
Leu	Gln	Asn	Leu	Gly	Tyr	Ser	Val	Asp	Val	Lys	Lys	Asn	Leu	Thr	Ala
		195					200					205			
Ser	Asp	Met	Thr	Thr	Glu	Leu	Glu	Ala	Phe	Ala	His	Arg	Pro	Glu	His
	210					215					220				
Lys	Thr	Ser	Asp	Ser	Thr	Phe	Leu	Val	Phe	Met	Ser	His	Gly	Ile	Arg
225					230					235					240
Glu	Gly	Ile	Cys	Gly	Lys	Lys	His	Ser	Glu	Gln	Val	Pro	Asp	Ile	Leu
				245					250					255	
Gln	Leu	Asn	Ala	Ile	Phe	Asn	Met	Leu	Asn	Thr	Lys	Asn	Cys	Pro	Ser
			260					265					270		
Leu	Lys	Asp	Lys	Pro	Lys	Val	Ile	Ile	Ile	Gln	Ala	Cys	Arg	Gly	Asp
		275					280					285			
Ser	Pro	Gly	Val	Val	Trp	Phe	Lys	Asp	Ser	Val	Gly	Val	Ser	Gly	Asn
	290					295					300				
Leu	Ser	Leu	Pro	Thr	Thr	Glu	Glu	Phe	Glu	Asp	Asp	Ala	Ile	Lys	Lys
305					310					315					320
Ala	His	Ile	Glu	Lys	Asp	Phe	Ile	Ala	Phe	Cys	Ser	Ser	Thr	Pro	Asp
				325					330					335	
Asn	Val	Ser	Trp	Arg	His	Pro	Thr	Met	Gly	Ser	Val	Phe	Ile	Gly	Arg
			340					345					350		
Leu	Ile	Glu	His	Met	Gln	Glu	Tyr	Ala	Cys	Ser	Cys	Asp	Val	Glu	Glu
			355				360					365			
Ile	Phe	Arg	Lys	Val	Arg	Phe	Ser	Phe	Glu	Gln	Pro	Asp	Gly	Arg	Ala
	370					375					380				
Gln	Met	Pro	Thr	Thr	Glu	Arg	Val	Thr	Leu	Thr	Arg	Cys	Phe	Tyr	Leu
385					390					395					400
Phe	Pro	Gly	His												